

Module II

Operations Management

OBJECTIVES

1. Understand the requirements of DOE 5480.19 regarding management and administration at DOE facilities and its associated impact on safety and efficiency of operations. (1.b)
2. Discuss the purpose and describe the roles and responsibilities of the technical manager in implementing DOE 5480.19, Conduct of Operations Requirements for DOE facilities. (2.a)
3. Discuss the concept of “graded approach” and how it applies to the implementation of conduct of operations. (2.j)
4. Refer to a copy of DOE 5480.19, Attachment I, and locate applicable guidelines and requirements for specific activities. (1.a)

DOE 5480.19, Attachment I, Chapters 1, 5, 14, and 15 have been combined to make up the Operations Management section.

I. Chapter Summaries

A. Chapter 1: Operations Organization and Administration.

This chapter describes the administrative controls and practices that, when implemented fully, result in an effective and safe operational environment. Beginning with DOE facility policies that describe the philosophy of standards of excellence under which the facility is operated and establish clear lines of responsibility for normal and emergency conditions, other principles are suggested for the control of operations. These are: establishing written standards for operations, providing adequate resources to permit effective implementation, periodically monitoring and assessing performance, and holding personnel accountable for their performance. Administrative controls put into place a system whereby operational effectiveness and safety can be measured and analyzed. The development and implementation of corrective actions follows. Continuous improvement in efficiency and safety is thus achieved in accordance with total quality management principles.

B. Chapter 5: Control of On-Shift Training

The guidelines of this chapter relate to control of training activities by operations personnel. On-shift training should be conducted so that the trainee satisfactorily completes all of the required training objectives and receives maximum learning benefit from this experience without unduly affecting normal operations. Facility operation by personnel under instruction should be carefully supervised and controlled to avoid mistakes in operations by unqualified personnel and to use trainee's time effectively. These controls are therefore necessary to maintain safe and efficient operation of the facility during the conduct of hands-on training. The following are key elements: adherence to formal training programs, use of instructors that are qualified themselves on the subject equipment, supervision and control of trainees by qualified operators, operator qualification program approval, formal training documentation, suspension of training during abnormal or accident conditions, and establishing a maximum number of trainees at one time.

C. Chapter 14: Required Reading

This chapter describes an effective required-reading program. Such a program contributes to facility safety and efficiency by ensuring that appropriate individuals are made aware of important information that is related to job assignments. Procedure changes, equipment design changes, related industry and in-house operating experience information, and other information necessary to keep operations department personnel aware of current facility activities are examples of the kind of useful information that should be made available to keep operating personnel current.

D. Chapter 15: Timely Orders to Operators

This chapter describes the key features of an effective operator orders program. This contributes to safe and efficient operation by providing a means for communicating current, short-term information and administrative instructions to operations personnel. This becomes necessary to accommodate the changing needs and requirements of DOE facility operations. For example, orders could include instructions on the need for and performance of specific evolutions or tests; it could also include work priorities, announcements of policy information, and administrative information. Typical information includes special operations, administrative directions, special data-collection requirements, plotting process parameters, and other similar short-term matters.

II. Overview

A. **Management Responsibilities:** To improve quality and provide uniformity of operations through the following methods:

1. Manage, organize, and conduct operations in a manner that assures an acceptable level of safety.
2. Ensure procedures are in place to control the conduct of operations.
3. Review existing and planned programs important to safe and reliable facility operations.
4. Assess the effectiveness of corporate directives, plans, or procedures.

B. **In order to fulfill these responsibilities, facility management should perform the following:**

1. Use the Order and Attachment I of the Order in the review and development of existing and proposed directives, plans, or procedures relating to the conduct of operations.

2. Use a graded approach in the application of the guidelines provided in Attachment I to assure that the depth of detail required and the magnitude of resources expended for operations are commensurate with each facility's programmatic importance and potential environment, safety, and health impact.
3. Document conformance with the requirements of DOE 5480.19. As a minimum, a document (e.g. a matrix) shall be prepared in coordination with the Head of the Field Element and the cognizant Program Secretarial Official(s) that:
 - Indicates whether a specific guideline applies to a facility;
 - Indicates where and how each of the guidelines (Attachment I) of this Order are applied within the contractor's existing policies and procedures; and
 - Identifies any deviations or exemptions from the guidelines.
4. The Graded Approach Matrix is:
 - Produced and submitted by the contractor
 - Approved by the DOE Operations Office
 - An agreement between the contractor and the DOE Operations Office on how DOE 5480.19 will be applied in the facility.

III. Chapters and Guidelines Review

- A. **Operations Organization & Administration:** establishes the guidelines for publishing written standards, optimizing use of resources, measuring performance, and instituting expectations in the facility.

(The following explanations provide a summary for each of the guidelines. Refer to Attachment 1 of DOE 5480.19 if more detail is needed for a specific guideline.)

1. **Operations Policies:** Procedures or other definitive documentation specify policies for operations. These policies specify goals and the means for achievement. Operations personnel should clearly understand their authority, responsibility, accountability, and interfaces with other groups.
2. **Resources:** The operations supervisor is provided with sufficient resources (materials and personnel) to accomplish assigned tasks without excessive overtime by the operations staff.
3. **Monitoring of Operating Performance:** Operating activities are monitored so that problems can be documented and analyzed, and corrective actions can be implemented.
4. **Safety, Environment, and Operating goals:** These goals are used as a management tool for improving performance and for measuring effectiveness in areas such as:
 - Minimizing the unavailability of safety systems
 - Minimizing personnel errors
 - Maintaining radiation exposure As Low As (is) Reasonably Achievable
 - Minimizing the number of unscheduled facility shutdowns per year
 - Minimizing waste
5. **Goals should have the following attributes:**
 - Auditable - enables comparison of actual performance against standards of performance. This will enable the organization to determine whether or not it is meeting its goals.
 - Measurable - enables the organization to quantify the process and to develop performance measures/indicators.
 - Realistic - ensures that the goals are achievable.

- Challenging - ensures that the organization is striving to perform at a higher level.
- Facilitate improvement - measuring and evaluating the process to meet the goals will facilitate continuous improvement.

The following activities are performed to evaluate a facility's ability to meet its goals and to identify areas for improvement:

- Inspections
- Audits
- Reviews
- Investigations
- Surveillance
- Self-assessments

6. **Accountability:** Workers and their supervisors are held accountable for operating performance. Personnel involved in significant or frequent violations of operating practices are counseled, retrained, and/or disciplined.
 7. **Management Training:** Formalized supervisory and management training is incorporated into training programs.
 8. **Planning for Safety:** Facility guidance exists which describes safety preplanning and explains the role of safety analysis reviews, job safety analyses, and the handling of safety matters. All operations personnel should understand safety planning requirements.
- B. **Orders to Operators:** Provides a channel for management to communicate short term information and administrative instruction to operations personnel. This information tends to be "real time" and is related directly to the operation of the facility.

(The following explanations provide a summary for each of the guidelines. Refer to Attachment 1 of DOE 5480.19 if more detail is needed for a specific guideline.)

1. **Content and Format:** Orders should be clearly written, dated, and maintained in the control room. Information such as special operations, special data-collection requirements, and other similar short-term/non-permanent matters can be included in operator orders. Examples of orders include: instructions for performance of specific evolutions/tests, work priorities, and administrative information.
2. **Issuing, Segregating, and Reviewing Orders:** Operator orders are issued by the operations supervisor or designee to communicate instructions to shift personnel. Operator orders are segregated into daily and long-term orders. Appropriate operations personnel review orders early in the shift and document their review by initialing the log or notebook.
3. **Removal of Orders:** Orders that are no longer applicable or are outdated should be promptly removed or canceled. The operations supervisor should periodically review the operator orders to ensure that only applicable and current orders remain effective.

- C. **Required Reading:** Provides a channel for management to communicate important information related to operator job assignments and keep personnel informed of current facility activities. This program binder includes information such as: professional development, lessons learned, facility activities, or other pertinent matters.

(The following explanations provide a summary for each of the guidelines. Refer to Attachment 1 of DOE 5480.19 if more detail is needed for a specific guideline.)

1. **File Index:** A list of the types of documents to be included in the required reading file is maintained. The list includes: Procedure changes; Equipment design changes; Related industry and in-house operating experience information; etc.
 2. **Reading Assignments:** A method should be in place to designate which documents need to be read by the individuals filling each position, and the reading file should be readily available to those individuals.
 3. **Required Dates for Completion of Reading:** A required completion date is designated for each reading assignment. Certain documents may be designated for “immediate reading”, and are read before assuming responsibility for a shift position.
 4. **Documentation:** Completion of reading is documented, and documentation is retained.
 5. **Review:** The reading file is periodically reviewed to ensure that all personnel complete readings as required. Material that has been read by all appropriate personnel should be transferred from the active file to a “dead” file.
- D. **Control of On-shift Training:** Ensure on-shift training is effectively and safely conducted.
- (The following explanations provide a summary for each of the guidelines. Refer to Attachment 1 of 5480.19 if more detail is needed for a specific guideline.)
1. **Adherence to Training Programs:** On-shift training is conducted in accordance with training programs that specifically identify knowledge and performance criteria.

2. **On-shift Instructor Qualification:** On-shift training should be conducted by qualified operators. This may require the successful completion of appropriate instructor training.
3. **Qualified Operator Supervision and Control of Trainees:** Whenever trainees operate equipment, a qualified operator serving as an on-shift instructor observes the trainee closely and remains in a position to intervene or assume control.
4. **Operator Qualification Program Approval:** The operator qualification program is approved by line management, and changes to the program are coordinated with the training department.
5. **Training Documentation:** Completion of the operator qualification program is formally documented.
6. **Suspension of Training:** Trainee operation of equipment is immediately suspended during unanticipated or abnormal events, accident conditions, or whenever else it is deemed necessary to ensure safe and reliable facility operation.
7. **Maximum Number of Trainees:** A maximum limit for the trainee-to-instructor ratio will ensure that the trainee is provided with the most effective instruction and will ensure that the instructor is not distracted by having too many trainees.

References and Suggested Reading

DOE 5480.19

Chapter 1	Operations Organization and Administration
Chapter 5	Control of On-Shift Training
Chapter 14	Required Reading
Chapter 15	Orders to Operators

DOE-STD-1032-92 Guide to Good Practices for Operations Organization and Administration

DOE-STD-1040-93 Guide to Good Practices for Control of On-Shift-Training

DOE-STD-1033-92 Guide to Good Practices for Required Reading

DOE-STD-1034-93 Guide to Good Practices for Timely Orders to Operators

DOE-EM-STD-5505-96 Operations Assessments

Module II Exercise

Requirements Exercise

You are the operations supervisor at a DOE facility. A member of your staff recently conducted an assessment of operations. She submitted a report with several deficiencies, but forgot to identify what requirements were not being met. Below is the list of deficiencies. For each deficiency, identify what Order requirement(s) are not being met. Refer to 5480.19, Attachment I for identification of appropriate requirements

Please see the end of this module for solutions/explanations.

DEFICIENCY 1:

Operating goals are not used as a management tool for improving operating performance. The operations manager does not publish operating goals, performance indicators, etc. for use by operators and foremen.

DEFICIENCY 2:

Roles and responsibilities are not clearly defined. Position descriptions do not accurately reflect the current duties of operations personnel. This results in certain necessary activities not being accomplished.

DEFICIENCY 3:

There is no requirement for shift supervisors to have management or supervisory training. Two of three shift supervisors have not had supervisory training.

DEFICIENCY 4:

Supervisory tours are not effectively identifying operational problems. There were examples of improperly installed scaffolding and ladders, loose tools lying at old job sites, and rusted pipes and valve carcasses stuffed behind equipment.

DEFICIENCY 5:

Facility guidance which describes safety planning requirements for all operational activities does not exist.

DEFICIENCY 6:

Facility supervisors and operators are not aware of required reading requirements. They could not respond as to whether the program existed in their area.

DEFICIENCY 7:

The Required Reading file is not being periodically reviewed to ensure that all Power Plant personnel complete the reading by a designated date. Additionally, material that has been read by Power plant personnel is not being removed on a regular basis and, as a result, the reading file is comprised of old and sometimes out of date information.

DEFICIENCY 8:

There is not a system in place to ensure that operators have read procedure revisions contained in the required reading file prior to using the procedures.

DEFICIENCY 9:

The system in place at the facility does not ensure that the operators receive information in a timely manner. The operators are not required to review the shift orders prior to beginning their shift nor are they required to attend the briefing where the orders are discussed.

DEFICIENCY 10:

Shift orders are used to change or modify existing procedures.

DEFICIENCY 11:

A review process for standing orders has not been established. Only one of four standing orders has been initialed by facility personnel.

Requirements Exercise Solutions

DEFICIENCY 1:

Operating goals are not used as a management tool for improving operating performance. The operations manager does not publish operating goals, performance indicators, etc. for use by operators and foremen.

(Page I-16, Ch. I, guideline 1)

"Procedures or other definitive documentation should specify policies that are to be applied for operations. These policies should specify goals and the means to achieve those goals."

(Page I-17, Ch. I, guideline 3)

"Goals should be auditable, measurable, realistic, and challenging."

DEFICIENCY 2:

Roles and responsibilities are not clearly defined. Position descriptions do not accurately reflect the current duties of operations personnel. This results in certain necessary activities not being accomplished.

(Page I-16, Ch. 1, guideline 1)

"Responsibilities for implementing policies, including shift personnel, if applicable, should be clearly defined. Operations personnel should clearly understand their authority, responsibility, accountability, and interfaces with other groups."

DEFICIENCY 3:

There is no requirement for shift supervisors to have management or supervisory training. Two of three shift supervisors have not had supervisory training.

(Page I-18, Ch. I, guideline 5)

"Formalized supervisory and management training should be incorporated into training programs. This is especially important to the first-line supervisors on shift and should aid them in managing shift activities."

DEFICIENCY 4:

Supervisory tours are not effectively identifying operational problems. There were examples of improperly installed scaffolding and ladders, loose tools lying at old job sites, and rusted pipes and valve carcasses stuffed behind equipment.

(Page I-17, Ch. 1, guideline 3)

"Line managers and supervisors should perform routine observations of personnel performing operating activities. Deficiencies identified should be documented, trended, and corrected."

DEFICIENCY 5:

Facility guidance which describes safety planning requirements for all operational activities does not exist.

(Page I-18, Ch.1, guideline 6)

"Facility guidance should exist which describes safety preplanning requirements for all operational activities."

DEFICIENCY 6:

Facility supervisors and operators are not aware of required reading requirements. They could not respond as to whether the program existed in their area.

(Page I-83, Ch. 14, guideline 2)

"A method should be in place to designate which documents need to be read by the individuals filling each position, and the reading file should be readily available to those individuals."

DEFICIENCY 7:

The Required Reading file is not being periodically reviewed to ensure that all Power Plant personnel complete the reading by a designated date. Additionally, material that has been read by Power plant personnel is not being removed on a regular basis and, as a result, the reading file is comprised of old and sometimes out of date information.

(Page I-84, Chap. 14, guideline 5)

"The reading file should be periodically reviewed to ensure that all department personnel complete readings by the

required dates. Material that has been read by all appropriate personnel should be removed from the active file."

DEFICIENCY 8:

There is not a system in place to ensure that operators have read procedure revisions contained in the required reading file prior to using the procedures.

(Page I-84, Ch. 14, guideline 3)

"Certain documents may be designated for immediate reading. These should be read before assuming responsibility for a shift position."

DEFICIENCY 9:

The system in place at the facility does not ensure that the operators receive information in a timely manner. The operators are not required to review the shift orders prior to beginning their shift nor are they required to attend the briefing where the orders are discussed.

(Page I-86, Ch. 15, guideline 2)

"Appropriate operations personnel should review the orders early in the shift and document their review by initialing the log or notebook."

DEFICIENCY 10:

Shift orders are used to change or modify existing procedures.

(Page I-85, Ch. 15, guideline 1)

"The operators order program should not be used to change operating procedures, because the changes noted in the operator orders may be missed by a procedure user."

DEFICIENCY 11:

A review process for standing orders has not been established. Only one of four standing orders has been initialed by facility personnel.

(Page I-86, Ch. 15, guideline 2)

"Reviews of long-term orders may not be required on a daily basis but should be made periodically.... Appropriate operations personnel should review the orders early in the shift and document their review by initialing the log or notebook."

